Spotlight on Special Topics

A SMARTPHONE-BASED APPLICATION POST-PERCUTANEOUS CORONARY INTERVENTION TO MANAGE CARDIOVASCULAR DISEASE RISK

Poster Contributions
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Background: The period between inpatient hospitalization for symptomatic coronary artery disease (CAD) and post-discharge office consultation remains a vulnerable interval for adverse outcomes. We sought to develop and evaluate a tool to help guide, reassure and educate patients during this susceptible time.

Methods: We customized content on a digital health platform for hospitalized patients receiving percutaneous coronary intervention (PCI) which included disease and lifestyle education, physical activity tracking, medication and appointment reminders, surveys and access to third-party live health coaches. We conducted a single-arm open-label pilot study of the smartphone application (app) to test its feasibility and efficacy at two academic medical centers (NCT03416920). Recruitment of patients with elective PCI for symptomatic CAD without myocardial infarction (MI) was capped at 50. Incident adverse cardiovascular outcomes were identified by chart review and phone survey within 90 days. Here, we report app engagement (live coach messaging, daily engagement, and weekly engagement), as well as their correlations with cardiovascular risk factors.

Results: 119 of 325 eligible (36.7%) were enrolled prior to discharge from incident PCI admission between 02/18 and 06/19. 69 of 119 (57.9%) underwent PCI for MI. Mean age was 62.4 (9.8) years, 88 (74.0%) were male, 38 (38.7%) had diabetes, and 59 (49.6%) had previously known CAD. App engagement was high - mean days enrolled 117.5 days, 46.9% mean daily engagement and 63.1% mean weekly engagement within the first 90 days. Median per patient messages with health coaches was 12 [IQR 8-27.5]. Pearson correlation analyses revealed no significant associations between engagement metrics and age, sex or known cardiovascular risk factors.

Conclusion: A post-PCI smartphone app, with live health coaches, deployed upon hospital discharge is feasible. Engagement with mobile health technology was high and not predicted by traditional cardiovascular risk factors implying potential broad utility among patients with CAD. Ongoing work will elucidate how diverse engagement metrics can predict adverse cardiovascular outcomes.